REMARKS

Claims 1-60 are pending in the application. No claims have been amended, canceled, withdrawn, or added. Applicant respectfully requests reconsideration and allowance of the pending claims in the subject application.

In the previous Action, the Office rejected originally rejected claims 1-60 in view of a primary reference, U.S. Patent No. 6,674,372 to Ouyang in combination with multiple secondary references. Applicant's response was apparently persuasive as the Office has withdrawn the rejection of the claims in view of these previously cited combinations of references. However, the Office has now raised new grounds for rejecting the claims, which are fully addressed below.

35 U.S.C. § 103 Rejections

Claims 1, 5, 6, 9, 10, 15-17, 19-21, 23, 26, 29, 32, 36, 41, 42, 45-52, 55, 56, 59, and 60 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,674,372 to Ouyang (hereinafter, "Ouyang") in view of U.S. Patent No. 6,009,444 to Chen (hereinafter, "Chen"). Applicant respectfully traverses the rejection.

Claim 1 defines a mobile device, comprising:

> a keypad of number keys, the number keys having associated letters;
>
> a language system to receive an input string entered via the keypad that is representative of one or more phonetic characters and generate likely language characters based on the input string;
>
> a display to present the likely language characters for user selection; and

the language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection.

As described in one exemplary implementation in the subject application, Applicant's claimed mobile device has a keypad with numbers, where the number keys have associated letters. Fig. 1 of the subject application is reproduced below.

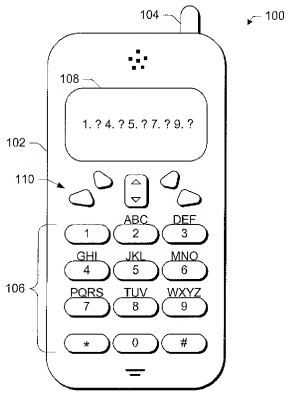


Fig. 1

The mobile device constructs a phonetic character (e.g., Pinyin) through input of a string of letters by pressing the corresponding lettered keys of the keypad. For example, to input the phonetic Pinyin text "mi" or "ni", the user would press 6 to input "m" or "n" and then 4 to yield "mi" or "ni". With each input, the mobile phone presents possible language characters (e.g., Hanzi). The

available choices are indexed by specifically chosen keys that have associated letters of the alphabet that do not follow the phonetic characters already entered. Continuing the above example, after the user enters "64", keys 1, 4, 5, 7, and 9 are chosen as selection keys because the letters associated with digits 4 (GHI), 5 (JKL), and 7 (PQRS) (note that digits 1 and 9 do not have any associated letters) would not follow a Pinyin string of "mi" or "ni". The possible language characters (e.g., Chinese Hanzi characters) are thus assigned to the selection keys 1, 4, 5, 7, and 9. If the user sees a word that he/she wants to input, the user can directly press any one of the keys 1, 4, 5, 7, and 9 for immediate selection of the corresponding language character.

The remaining keys 2, 3, 6, and 8 continue being input keys because they correspond to phonetic characters that still might be entered. For example, following entry of "mi" or "ni" by pressing keys 6 and 4, the user may be intending to enter the Pinyin text "min" or "nin". Thus, pressing the key 6 again will form a three digit input of 6, 4, 6 for further input of phonetic text to yield "min" or "nin", rather than selection of a converted character.

Accordingly, depending upon the user's input, the device dynamically adjusts which keys are used to index possible language characters and which keys are used to receive further phonetic text, thereby allowing differentiation between the user's input of an additional phonetic text and the user's confirmation of an intended converted language character. In this manner, the user need not switch modes between input and selection, as they are seamlessly integrated.

The combination of Ouyang and Chen fails to teach or suggest the mobile device of claim 1. The primary reference, Ouyang, describes a device, such as a cellphone, with a numeric keypad customized for entry of Chinese text. Instead of

having letters associated with the numbered keys, this customized keypad assigns specific phonetic symbols and tone symbols to the numbered keys. (*Ouyang*, Fig. 1 and col. 6, line 36 through col. 7, line 9). The user presses a key to input the corresponding phonetic symbol or tone signal. Fig. 2 of Ouyang is reproduced below.

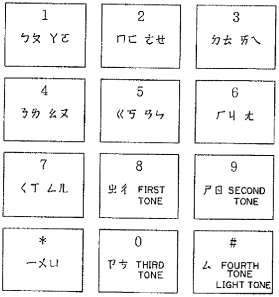
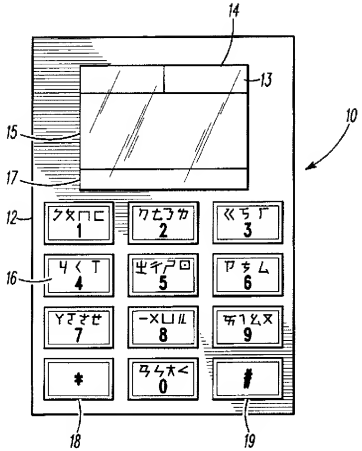


Fig 2 of the Ouyang Reference

The secondary reference, Chen, describes a computer system for inputting phonetic Chinese (Zhuyin) using a numeric keypad. Like Ouyang, instead of having letters associated with the numbered keys, Chen's customized keypad assigns specific phonetic symbols to the numbered keys. (*Chen*, Fig. 1 and col. 2, lines 42-49). Fig. 1 of Chen is reproduced below.



The user presses a first key to input the corresponding phonetic symbol from a first set of keys (e.g., keys 1-6), and presses a second key from a second set of keys (e.g., keys 7-0) that is different than the first set of keys to input a second phonetic symbol. (*Chen*, col. 2, lines 50-67).

The cited combination does not teach or suggest a mobile device having "a keypad of number keys, the number keys having associated letters" as required by claim 1. Ouyang describes a keypad with number keys, but the number keys do not have associated letters; rather, the number keys are assigned corresponding phonetic and tone symbols. Chen describes a keypad with number keys, but the number keys do not have associated letters; rather, the number keys are assigned corresponding phonetic symbols.

For this reason alone, claim 1 is patentable over the combination of Ouyang and Chen.

Secondly, the cited combination does not teach or suggest a mobile device with a "language system" that is "configured to facilitate input of the input string and selection of a language character without switching modes between input and selection", as required by claim 1. The Office acknowledges that Ouyang does not teach this feature. (*Office Action of 10/13/05 ("Action"), section 1*). The Office relies on Chen as teaching this aspect, and particularly points to Fig. 1 and accompanying text beginning at column 2, lines 10-35, lines 59-67, and col. 3, lines 33-46. Applicant respectfully disagrees.

According to Chen, "FIG. 1 shows the mapping of 37 Chinese phonetic symbols to 10 telephone digit keys. The first set of symbols comprises 21 phonetic symbols. These are displayed on keys 1-6 of keypad 16. The second set of symbols comprises 16 phonetic symbols. These are displayed on keys 7-0 of keypad 16. The lower left hand key 18 has the symbols "*" (referred to as "star"). The lower right hand key 19 has the symbols "#" (referred to as "pound")." (*Chen*, col. 2, lines 42-47; see also col. 2, lines 10-42). Chen does not use these keys to "facilitate input of the input string and selection of a language character without switching modes between input and selection", as claim 1 recites. Instead, Chen requires the user to switch out of a phonetic symbol input mode before the user is allowed to select a corresponding language character.

Specifically, the system of Chen allows a user to press a first key to input the corresponding phonetic symbol from a first set of keys (e.g., keys 1-6), and press a second key from a second set of keys (e.g., keys 7-0) that is different than the first set of keys to input a second phonetic symbol. (*Chen*, col. 2, lines 50-67,

and col. 3, lines 1-37). This portion of Chen expressly teaches that when the second key is pressed, the phonetic symbol corresponding to the first set of keys is "**temporarily fixed** in the window 13 and causes the **next candidate symbol** [corresponding to the second set of keys] to be displayed in the window13" (emphasis added). Then, Chen at col. 3, lines 38-46, expressly teaches that only after the user finally selects the input phonetic symbols (e.g., the "temporarily fixed" and "next candidate" symbols) by pressing the "#" key, will the user be allowed to select a corresponding language character. Clearly, this means that Chen requires the user to switch out of a phonetic symbol input mode before the user is allowed to select a corresponding language character.

The cited combination does not teach or suggest a mobile device with a "language system" that is "configured to facilitate input of the input string and selection of a language character without switching modes between input and selection" as required by claim 1. The Office acknowledges that Ouyang does not teach this feature. Modifying Ouyanf with Chen does not cure this deficiency. Chen teaches that a user is required to switch out of a phonetic symbol input mode before the user is allowed to select a corresponding language character. Requiring the user to finally select the input phonetic symbols before allowing the user to select from a set of corresponding language characters does not teach or suggest "the language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection", as claim 1 requires. For this additional reason, claim 1 is patentable over Ouyang and Chen.

For the above reasons, claim 1 is allowable over the combination of Ouyang and Chen. Applicant respectfully requests that the §103 rejection be withdrawn.

Dependent claims 5, 6, 9, 10, 15, and **16** depend from claim 1 and are allowable by virtue of this dependency. Accordingly, withdrawal of the 35 USC §103(a) rejection of claims 5, 6, 9, 10, 15, and 16 is respectfully requested.

Independent claim 17 defines a mobile device comprising "a keypad of number keys, the number keys having associated letters of an alphabet" and "a direct key-based search engine that generates possible language characters that are not part of the alphabet based on a key sequence entered on the keypad".

The cited combination does not teach or suggest the mobile device of claim 17. Neither reference teaches a "keypad of number keys" where the number keys have "associated letters of an alphabet". Ouyang shows a keypad, but not one with numbered keys with associated letters of an alphabet. Instead, Ouyang merely shows number keys with associated phonetic symbols of the Chinese language. Chen also fails to teach this aspect.

Additionally, neither reference teaches the claimed "direct key-based search engine". The Office admits that Ouyang does not teach this aspect (*Office Action of 2/9/05, page 4*) and fails to show that Chen does. More particularly, after indicating that the primary reference does not teach this claimed feature, the present Action fails to cite any portion of Chen which teaches this admitted missing feature. For this reason alone, the Action has failed to present a prima facie case of obviousness with respect to claim 17.

Preliminarily, Chen merely teaches that after a user has finished inputting phonetic symbols into the system of Chen, the user exits the input mode by

pressing the "#" key, responsive to which the system "looks up the desired character in dictionary 31" (*Chen*, column 3, lines 38-46). Applicant respectfully submits that a keypad displaying phonetic symbols for user selection to locate a corresponding language character does not teach or suggest "a direct key-based search engine that generates possible language characters that are not part of the alphabet based on a key sequence entered on the keypad", as claim 17 requires. Thus, the cited combination fails to teach or suggest each and every element of claim 17.

Accordingly, for each of the above reasons, withdrawal of the 35 USC §103(a) rejection to claim 17 is respectfully requested.

Dependent claims 19-20 depend from claim 17 and are allowable by virtue of this dependency. Accordingly, withdrawal of the 35 USC §103(a) rejection of claims 19-20 is respectfully requested. Moreover, these claims recite features that, when taken together with those of claim 17, define mobile devices not taught or suggested by Ouyang and Chen.

Independent claim 21 defines a mobile device, comprising:

> a keypad of number keys, the number keys having associated letters of an alphabet;
>
> an association module that associates a key sequence with language characters that are not part of the alphabet; and
>
> a display to present the possible language characters as the user depresses individual keys based on the key sequence.

Ouyang and Chen fail to teach this mobile device. For the reasons given above with respect to claims 1 and 17, the cited combination fails to teach or

suggest the claimed "keypad of number keys" where the number keys have "associated letters of an alphabet." For this reason alone, the cited combination fails to teach each and every element of claim 21.

Additionally, the cited combination further fails to teach "an association module that associates a key sequence with language characters that are not part of the alphabet" and "a display to present the possible language characters as the user depresses individual keys based on the key sequence." The Office admits that Ouyang does not teach this aspect (*Office Action of 2/9/05, page 5*), and fails to show where that Chen does. More particularly, after indicating that the primary reference does not teach this claimed feature, the present Action fails to cite any portion of Chen which teaches this admitted missing feature. For this reason alone, the Action has failed to present a prima facie case of obviousness with respect to claim 21.

For each of the above reasons, withdrawal of the 35 USC §103(a) rejection of claim 21 is respectfully requested.

Dependent claim 23 depends from claim 21 and is allowable by virtue of this dependency.

Dependent claim 26 depends from claim 24 and is allowable by virtue of this dependency. Independent claim 24 defines a mobile device comprising:

> a keypad of number keys, the number keys having associated letters of an alphabet;
>
> a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters, and to convert the phonetic characters to language characters that are not part of the alphabet using a statistical

language model that utilizes at least one neighboring word in a common sentence; and

a display to present the language characters for user selection.

The combination of Ouyang and Chen fails to teach the claimed mobile device. The Office recognizes that Ouyang does not teach the language system. (*Office Action of 2/9/05*, page 6), but again relies on Chen for this teaching. Again, Applicant respectfully disagrees for the reasons already discussed with respect to claim 1. For those reasons alone, claim 24 is allowable over the cited combination of Ouyang and Chen. Since claim 26 depends from claim 24, Applicant requests that the §103 rejection of claim 26 be withdrawn.

Independent claim 29 defines a method comprising "receiving an input string entered via a keypad", "presenting likely language characters based on the input string", and "facilitating continued entry of the input string and selection of a suitable language character without switching modes between input and selection". For the reasons given above with respect to claim 1, Ouyang and Chen do not teach or suggest this method.

Applicant respectfully requests allowance of claim 29.

Dependent claims 32 and 36 depend from claim 29 and are allowable by virtue of this dependency.

Dependent claims 41 and **42** depend from claim 37 and are allowable over the cited combination by at least for reasons based on these respective dependencies. For instance, independent claim 37 recites:

receiving an input string entered via a numeric-based keypad where number keys in the keypad have associated letters in an alphabet, the input string being representative of one or more phonetic characters;

converting the input string of phonetic characters to possible language characters that are not part of the alphabet; and

presenting the language characters using an index that associates selection keys of the keypad with the language characters, the selection keys being chosen based on whether the letters associated with the selection keys are likely to follow the phonetic characters already entered.

For the reasons given above with respect to claim 1, the cited combination fails to teach or suggest this method. Claim 37 is therefore allowable over Ouyang and Chen. As a result, claims 41 and 42, which depend from claim 37, are also allowable over the cited combination. Withdrawal of the 35 USC §103 rejection of claims 41 and 42 is respectfully requested.

Independent claim 45 defines a method comprising "facilitating entry of phonetic characters via discrete keys of a keypad" and "generating possible language characters intended by the user based on a key sequence entered on the keypad in lieu of converting the phonetic characters to the language characters."

For the reasons given above with respect to claim 17, the cited combination does not teach or suggest this method. The Office admits that Ouyang does not teach the "generating" element. Chen is silent as to this feature as well. Chen looks up language characters based on input phonetic symbols. Thus, Chen does not teach, or effectively teaches away from, "generating possible language characters intended by the user *based on a key sequence entered on the keypad* in lieu of converting the phonetic characters to the language characters."

For these reasons, claim 45 is allowable and the §103 rejection should be withdrawn.

Dependent claim 46 depends from claim 45 and is allowable by virtue of this dependency.

Independent claim 47 defines a method comprising:

> receiving key entries entered via a numeric-based keypad where number keys in the keypad have associated letters;
>
> associating strings of key entries with language characters that are different than the letters; and
>
> presenting likely language characters intended by the user as the user depresses individual keys.

For the reasons given above with respect to claims 1 and 17, the cited combination fails to teach the method of claim 47, including "associating strings of key entries with language characters that are different than the letters" and "presenting likely language characters intended by the user as the user depresses individual keys." The §103 rejection should be withdrawn.

Dependent claim 48 depends from claim 47 and is allowable by virtue of this dependency.

Independent claim 49 recites a method comprising:

> receiving an input string of letters entered via a numeric-based keypad where number keys in the keypad have associated letters, the input string of letters being representative of one or more phonetic characters;
>
> converting the input string of letters that represent the phonetic characters to possible language characters based upon a context of at least one word in a sentence within which the input string is a part; and
>
> presenting the possible language characters for selection by the user.

For the reasons given above with respect to claim 24, the cited combination does not teach or suggest this method. The §103 rejection should be withdrawn.

Dependent claim 50 depends from claim 49, and is allowable by virtue of this dependency.

Independent claim 51 recites:

> receiving an input string entered via a keypad on a mobile device;
>
> sending the input string to a remote server;
>
> generating likely language characters based on the input string at the remote server; and
>
> returning the likely language characters to the mobile device for display.

The cited combination does not teach or suggest these claim features. Moreover, the Action fails to particular point out where any of these features are taught or suggested by the cited combination. Instead, the Action appears to reject the recited features of claim 51 based on the same rationale used to reject the features of claim 1. However, the features of claim 51 are not the same as the features of claim 1. The Action has failed to present any line of reasoning as to why the cited combination teaches these different features. As a result, the Action has failed to present a prima facie case of obviousness with respect to claim 51.

For this reason alone, the 35 USC §103(a) rejection of claim 51 is improper and should be withdrawn.

Independent claim 52 defines a mobile device, comprising:

> a keypad of number keys, the number keys having associated letters of an alphabet;

a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters, and to generate likely language characters based on the input string; and

a display to present the likely language characters for user selection.

For the reasons given above with respect to claim 1, the Ouyang/Chen combination fails to teach or suggest the claimed mobile device.

Dependent claims 55-56 and 59-60 depend from claim 52 and are allowable by virtue of this dependency.

Claims 2, 7, 18, 22, 24, 30, and 57 stand rejected under 35 USC §103(a) as being unpatentable over Ouyang in view of Chen ("Chen '444") and further in view of US patent number 6,073,146 to Chen ("Chen '146"). This rejection is traversed.

As a preliminary matter, these claims stand rejected in view of the Ouyang and Chen '444 and Chen '146 combination. However, this combination is improper for a number of reasons. First, there is no motivation to combine these references. Ouyang and Chen '444 are directed to devices with small numeric keypads and limited screen area. Ouyang and Chen '444 are both concerned with the challenges of entering Chinese characters with a limited number of keys, such as a 12-key keypad. In contrast, Chen '146 describes a personal computer with a full-size QWERTY keyboard and monitor. Chen's system does not even address how characters are input, other than to say that input is accomplished using a keyboard.

Input of Chinese characters using a 12-key keypad (such as those found on cellphones and PDAs) poses entirely different problems and issues, with unique considerations, in comparison to input of Chinese characters using a full-size QWERTY keyboard. A skilled artisan attempting to address the issues of inputting Chinese characters using a numeric keypad would not have been compelled or motivated to consider the computer system of Chen '146 with it's full-size keyboard. Moreover, there is no motivation or suggestion in Chen '146 whatsoever to implement his technology in a mobile device with a small 12-key keypad. The Office fails to describe how the references themselves suggest such a combination.

Further, it is unclear whether the Ouyang or the Chen '444 devices could even be modified to implement Chen's computer-implemented system. There is no teaching in Chen '146 of implementing the system in mobile devices. There is no indication that input design issues faced by device designers were even contemplated by Chen '146. The Action fails to describe how this combination would be made. Ouyang's and Chen's '444 small form factor device devices (e.g. cellular phones, pagers, PDA, etc.) would have to be severely modified, much beyond its teachings, in order to implement the system of Chen '146.

For these reasons, the combination relied on to reject claims 2, 7, 18, 22, 24, 30, and 57 is improper and should not have been made. Applicant respectfully requests reconsideration of the cited combination, and withdrawal of all §103 rejections using this combination.

The flaws in the combination are even more apparent when attempting to apply them to the claimed invention. Accordingly, the remainder of these remarks addresses the rejections in a claim-by-claim analysis.

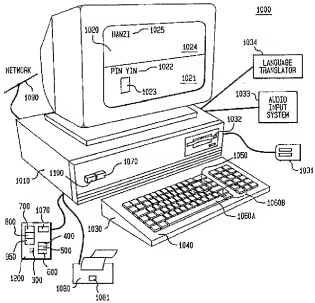
Dependent claim 2 depends from claim 1. For the reasons already discussed in the above, Ouyang in view of Chen '444 does not teach or suggest the features of claim 1. Modifying this combination of Ouyang and Chen '444 with the teachings of Chen '146 does not cure this deficiency. The Action in section 2 relies on Chen for the teaching of "wherein the phonetic characters are Chinese Pinyin and the language characters are Chinese Hanzi", as claim 2 recites. However, Chen '146 fails to teach the features of claim 1, which include:

> a keypad of number keys, the number keys having associated letters;
>
> a language system to receive an input string entered via the keypad that is representative of one or more phonetic characters and generate likely language characters based on the input string;
>
> a display to present the likely language characters for user selection; and
>
> the language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection.

Unlike Ouyang and Chen '444, the secondary reference, Chen '146, describes a computer system to imitate entered the phonetic text symbols with a diacritic to indicate a tone of the symbol (Chen '146, Abstract). Chen's computer system uses a full size QWERTY keyboard. (*Chen '146*, Fig. 1). The user employs the full size keyboard 1030 to enter Pinyin text into the system, where it is displayed on a first section 1021 of a split screen. The system converts the Pinyin to Hanzi, and displays Hanzi characters in a second section 1024 of the

split screen. (*Chen*, Fig. 1, col. 6, lines 21-33). Fig. 1 of Chen '146 is reproduced below.

FIG. 1



The cited combination does not teach or suggest a mobile device having "a keypad of number keys, the number keys having associated letters" as required by claim 1. Ouyang describes a keypad with number keys, but the number keys do not have associated letters; rather, the number keys are assigned corresponding phonetic and tone symbols. Chen '444 also describes a keypad with number keys, but the number keys do not have associated letters; rather, the number keys are assigned corresponding phonetic symbols. Chen '146 describes a full size QWERTY keyboard, and is silent as to a keypad with number keys that are used for entry of phonetic characters.

For this reason alone, claim 1 is patentable over the combination of Ouyang and Chen '444 and Chen '146.

Secondly, the cited combination does not teach or suggest a mobile device with a "language system" that is "configured to facilitate input of the input string and selection of a language character without switching modes between input and selection" as required by claim 1. The Office acknowledges that Ouyang does not teach this feature. For the reasons already discussed above, Chen '444 does not teach this feature. Moreover, Chen '146 does not teach this feature. Instead, according to Chen, Fig. 4 shows a "process for keyboard input that produces a Pinyin word registration in the memory." (*Chen '146*, col. 5, lines 31-33). The user enters Chinese or English text through the keyboard 1030, where Chinese syllables are followed by a diacritic and English syllables are not, but are delimited by spaces. (*Chen* '146, col. 10, lines 50-67). The entered Pinyin is displayed in a first section 1021 of the monitor (see Fig. 1). When the end of a syllable is reached, the system reads the diacritic. (*Chen*, '146 col. 11, lines 12-14). The system converts the Pinyin to Hanzi, and displays the Hanzi in the second section 1024 of the monitor. Unlike mobile devices with limited entry keys and limited screen area (as in claim 1), Chen '146is not concerned with switching modes between input and selection because Chen's '146 system employs a large monitor with sufficient screen area to show both the input Pinyin (*Chen*, Fig. 1, Pinyin section 1021) and converted Hanzi (*Chen* '146, Fig. 1, Hanzi section 1024). Chen's system further includes a full size keyboard where the user need not worry about switching between input and selection as there are many keys for both purposes. Thus, Chen '146 does not suggest a "language system" that is "configured to facilitate input of the input string and selection of a language character without switching modes between input and selection" as required by claim 1.

For this additional reason, claim 1 is patentable over Ouyang and Chen '444 and Chen '146.

Finally, the Office argues that it would have been obvious to one of ordinary skill to provide the teaching of Chen '146 into the system of Ouyang and Chen '444 in order to speed up the language conversion process. Applicant disagrees. A skilled artisan would not have combined these references, as there is no motivation to combine Ouyang and Chen '444 with Chen '146 given that they are entirely different systems. Ouyang and Chen '444 are directed to a devices with a numeric keypad and the challenges of entering Chinese characters with a limited number of keys. In contrast, Chen '146 describes a personal computer with a full-size QWERTY keyboard and monitor. Input of Chinese characters using a limited keypad (such as those found on cellphones and PDAs) poses entirely different issues, with unique considerations, in comparison to input of Chinese characters using a full-size QWERTY keyboard. A skilled artisan attempting to address the issues of inputting Chinese characters using a numeric keypad would not have been compelled or motivated to consider Chen's computer system with full-size keyboard.

For the above reasons, claim 1 is allowable over the combination of Ouyang and Chen '444 and Chen '146. Since claim 2 depends from claim 1, claim 2 is allowable over the cited combination. Applicant respectfully requests that the §103 rejection of claim 2 be withdrawn.

Dependent claims 7, 18, and **22** depend from respective ones of claims 1, 17, and 21. For the reasons already discussed above with respect to claim 2, claims 7, 18, and 22 are allowable over the cited combination of references at least for reasons based on their respective dependencies.

Independent claim 24 defines a mobile device comprising:

> a keypad of number keys, the number keys having associated letters of an alphabet;
>
> a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters, and to convert the phonetic characters to language characters that are not part of the alphabet using a statistical language model that utilizes at least one neighboring word in a common sentence; and
>
> a display to present the language characters for user selection.

The combination of Ouyang and Chen "444 and Chen "146 fails to teach the claimed mobile device. For the reasons already discussed above with respect to claim 1, Ouyang and Chen '444 fail to teach or suggest the features of claim 24. Additionally, the Office recognizes that Ouyang does not teach the language system, but again relies on Chen '146 for this teaching. Again, Applicant respectfully disagrees. First, Chen '146 fails to teach a "language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters" as required by claim 24. This has been addressed above in detail. Secondly, Chen '146 fails to teach "a language system . . . to convert the phonetic characters to language characters that are not part of the alphabet using a statistical language model that utilizes at least one neighboring word in a common sentence." Nowhere does Chen 146 describe a language system that converts phonetic characters to language characters "using a statistical language model that utilizes at least one neighboring word in a common sentence" as required by claim

24. Thus, the cited combination of references fails to teach or suggest all of the features of claim 24.

For these reason alone, claim 24 is allowable over the cited combination of Ouyang and Chen '444 and Chen '146. Accordingly, Applicant requests that the §103 rejection be withdrawn.

Dependent claim 30 depends from independent claim 27. Independent claim 27 recites:

> a resident language model residing on a mobile device to convert phonetic characters input into the mobile device into language characters using a first statistical language model; and
>
> a nonresident language model residing on a server remote from the mobile device, the nonresident language model being configured to convert the phonetic characters into the language characters using a second statistical language model.

The cited combination fails to teach or suggest the claimed system. First, none of Ouyang, Chen '444 and Chen '146 teaches a "resident language model residing on a mobile device to convert phonetic characters input into the mobile device into language characters using a first statistical language model" (the Action admits this with respect to Ouyang/Chen '444" in section 6 when referencing the features of claim 14. As noted above, Ouyang does not employ a statistical language model. Chen '444 merely indicates that input phonetic symbols are used to look up desired character in a dictionary (Chen '444, lines 37-41), and is completely silent with respect to any teaching or suggestion of a "statistical language model", as claim 27 recites. Chen '146 fails to provide any teaching of a "mobile device to convert phonetic characters input into the mobile device into language characters using a first statistical language model." For this

reason alone, claim 27 is allowable. Of the cited combination of references. Since claim 30 depends from claim 27, claim 30 is also allowable, at least for these reasons, over the cited combination of references.

Moreover, none of the references, alone or in combination, teaches a system with *both* a "resident language model residing on a mobile device" and "a nonresident language model residing on a server remote from the mobile device", as claim 27 recites. Furthermore, the Action has failed to point to any teaching or suggestion and provide any reasoning with respect to any one of the references that are cited against claim 30, which depends from claim 27, to show where these features of claim 27 are taught or suggested. Thus, the Action has clearly failed to present a prima facie case of obviousness with respect to claim 30, which depends from claim 27.

Accordingly, for each of the above reasons, withdrawal of the 35 USC §103(a) rejection of claim 30 is respectfully requested.

Dependent claim 57 depends from claim 52 and is allowable over the cited combination of references at least by virtue of this dependency. Independent claim 52 defines a mobile device, comprising:

> a keypad of number keys, the number keys having associated letters of an alphabet;
>
> a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters, and to generate likely language characters based on the input string; and
>
> a display to present the likely language characters for user selection.

For the reasons given above with respect to claim 2, the Ouyang/Chen '444/Chen '146 combination fails to teach or suggest the claimed mobile device of claim 52. Since claim 57 depends from claim 52, claim 57 is also allowable over the cited combination.

Accordingly, withdrawal of the 35 USC §103(a) rejection of claim 57 is respectfully requested.

Claims 3, 4, 31, 32, 37, 39, 40, 53, and 54 stand rejected under 35 USC §103(a) as being unpatentable over Ouyang in view of Chen '444 and further in view of US patent number 6,489,952 Griffin et al. ("Griffin"). This rejection is traversed.

Dependent claim 3 depends from claim 1. For the reasons already discussed above, Ouyang in view of Chen '444 does not teach or suggest the features of claim 1. Modifying Ouyang in view of Chen '444 with the teachings of Griffin do not cure this deficiency of Ouyang in view of Chen '444.

Griffin teaches a hand-held electronic device with a keyboard, a thumbwheel, and a display for thumb-based and/or keystroke data entry for international character scrolling and auto-capitalization. (*Griffin*, Abstract). More particularly, Griffin teaches that a user can press a key on a hand-held device and use a thumb-wheel to produce inputs that allows the user to scroll through a list of international characters associated with the pressed key. (*Griffin*, column 10, lines 5-47).

Claim 1 recites:

- "a keypad of number keys, the number keys having associated letters",

- "a language system to receive an input string entered via the keypad that is representative of one or more phonetic characters and generate likely language characters based on the input string",
- "a display to present the likely language characters for user selection", and
- "the language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection."

The cited combination does not teach or suggest these claimed features. For example, the cited combination does not teach or suggest a mobile device with a "language system" that is "configured to facilitate input of the input string and selection of a language character without switching modes between input and selection" as required by claim 1. The Office acknowledges that Ouyang does not teach this feature. For the reasons already discussed, Chen '444 does not teach this claimed feature, but instead teaches a user must exit a phonetic symbol input mode by pressing a particular delimiter key (e.g., the "#" key) before a language character can be selected for input phonetic symbols. Griffin teaches thumb-based and/or keystroke data entry for international character scrolling and auto-capitalization. Griffin is completely silent with respect to respect to input of any "input string [...] representative of one or more phonetic characters". As a result, the cited combination of references may never provide a "language system" that is "configured to facilitate input of the input string and selection of a language character without switching modes between input and selection" as required by claim 1. Since claim 3 depends from claim 1, claim 3 is also not obvious over the cited combination.

Accordingly, withdrawal of the 35 USC §103(a) rejection of claim 3 is respectfully requested.

Dependent claim 4 depends from claim 1. For the reasons discussed above with respect to claim 3, claim 4 is not obvious over the cited combination of references at least for reasons based on its dependency from claim 1.

Dependent claim 31 depends from claim 29. For the reasons already discussed above, Ouyang in view of Chen '444 does not teach or suggest the features of claim 29. More particularly, the Action admits that Ouyang does not teach "facilitating continued entry of the input string and selection of a suitable language character without switching modes between input and selection", as claim 29 requires. Chen '444 requires a user to switch out of a phonetic symbol input mode before a reference language character can be selected for input phonetic symbols, as discussed above with respect to claim 1. Thus, Chen '444 does not cure the deficiency of Ouyang. Modifying this combination with Griffin still fails to teach these claim features.

Griffin teaches thumb-based and/or keystroke data entry for international character scrolling. at column 9, line 51, through calm 10, line 47, Griffin teaches that "the thumbwheel and at least one key on the keyboard may be utilized to insert international characters into a user input field". To accomplish this, Griffin teaches that "the user first presses and holds down a key with the desired associated international characters while the thumbwheel is rolled. For each rolled input from the thumbwheel, a different international character associated with the depressed key is outputted on the display as a substitute for the previous character displayed. [...] When the desired character is displayed, the user releases the depressed key and the desired character remains on the display." Thus, the system

of Griffin requires a user to switch out of input mode (a keypress in combination with thumbwheel input to scroll in display potential characters) to select a displayed character ("the user releases the depressed key and the desired character remains on the display"). As a result, Griffin does not teach "facilitating continued entry of the input string and selection of a suitable language character without switching modes between input and selection".

Accordingly, modifying Ouyang and Chen '444 with Griffin's system that requires a user switch out of an input mode to select a character does not teach or suggest "facilitating continued entry of the input string and selection of a suitable language character without switching modes between input and selection", as claim 29 requires. Since claim 32 depends from claim 29, claim 32 is also not obvious over the cited combination.

Withdrawal of the 35 USC §103(a) rejection of claim 32 is respectfully requested.

Independent claim 37 recites:

> receiving an input string entered via a numeric-based keypad where number keys in the keypad have associated letters in an alphabet, the input string being representative of one or more phonetic characters;
>
> converting the input string of phonetic characters to possible language characters that are not part of the alphabet; and
>
> presenting the language characters using an index that associates selection keys of the keypad with the language characters, the selection keys being chosen based on whether the letters associated with the selection keys are likely to follow the phonetic characters already entered.

For the reasons given above with respect to claim 1, the combination of Ouyang in view of Chen '444 fails to teach or suggest "presenting the language characters using an index that associates selection keys of the keypad with the language characters, the selection keys being chosen based on whether the letters associated with the selection keys are likely to follow the phonetic characters already entered", as claim 37 requires (i.e., this follows because Ouyang in view of Chen '444 fails to teach "receiving an input string entered via a numeric-based keypad where number keys in the keypad have associated letters in an alphabet, the input string being representative of one or more phonetic characters"). Modifying this combination with Griffin does not cure this deficiency.

Griffin teaches that international characters are associated with every key on a keyboard. To display the international characters associated with a key, the user depresses the key while rolling the thumbwheel. (Griffin, column 9, lines 51-60). These displayed characters have not yet been selected. Griffin teaches that a candidate international character is selected when "the user releases the depressed key" (the "desired character remains on the display"). Thus, the selection key of Griffin is chosen **based on whether the international character being selected has been assigned to the key being pressed and subsequently released,** and not "based on whether the letters associated with the selection keys are likely to follow the phonetic characters already entered", as claim 37 requires. Thus, modifying Ouyang and Chen '444 with the teachings of Griffin fails to teach each and every element of claim 37.

Accordingly, withdrawal of the 35 USC §103(a) rejection of claim 37 is respectfully requested.

Dependent claims 39 and 40 are allowable over the cited combination at least by virtue of their respective dependencies on claim 37.

Dependent claims 53 and **54** depend from claim 52 and are allowable over the cited combination at least for reasons based on these respective dependencies. claim 52 recites "a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters, and to generate likely language characters based on the input string". For the reasons already discussed above, the Ouyang/Chen '444 combination fails to teach or suggest the claimed mobile device. Modifying this combination with the teachings of Griffin does not cure this deficiency.

Griffin at column 10, lines 5-24, teaches that responsive to a user pressing a key, a keypad event is generated that provides descriptor information to identify the key that was pressed and to indicate whether the thumbwheel is being rolled up or down. This information is used to index up or down through an array containing references to international characters associated with the pressed key. Clearly, Griffin's key press generated descriptor information that identifies the pressed key and indicates which direction and how far to index into an array of international characters associated with the pressed key does not teach or suggest "a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad [...] to generate likely language characters based on the input string", as claim 52 requires.

In view of the above, modifying Ouyang and Chen '444 with the teachings of Griffin does not cure the already discussed deficiencies of Ouyang/Chen '444 with respect to claim 52. Claims 53 and 54 are also allowable over the cited

combination at least for reasons based on their respective dependencies on claim 52.

Withdrawal of the 35 USC §103(a) rejection of claims 53 and 54 is respectfully requested.

Claims 8, 28, and 58 stand rejected under 35 USC §103(a) as being unpatentable over Ouyang in view of Chen '444 and further in view of US patent number 6,292,772 to Kantrowitz. This rejection is traversed

Dependent claim 8 depends from claim 1 and is allowable over the cited combination at least for reasons of this dependency. For the reasons already discussed, Ouyang in view of Chen '444 does not teach or suggest the features of claim 1. Moreover, modifying this combination with the teachings of Kantrowitz does not cure this deficiency.

The Action relies on Kantrowitz for the teaching of "wherein the language system includes a character-based bigram language model and a word-based N-gram language model, where N>2". Assuming arguendo that Kantrowitz does teach that which they Action relies on Kantrowitz for, the cited portions of Kantrowitz, and Kantrowitz as a whole does not cure the already discussed deficiencies of Ouyang/Chen '444 with respect to claim 1. Kantrowitz merely teaches a system for identifying the language of individual words and is completely silent on the following features: "a keypad of number keys, the number keys having associated letters", "a language system to receive an input string entered via the keypad that is representative of one or more phonetic characters and generate likely language characters based on the input string", "a display to present the likely language characters for user selection", and "the language

system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection", as claim 1 requires. Thus, claim 8, which depends from claim 1, is not obvious over the cited combination of references.

Withdrawal of the 35 USC §103(a) rejection of claim 8 is respectfully requested.

Dependent claim 28 depends from claim 27 and is not obvious over the cited combination by virtue of this dependency. For the reasons already discussed, Ouyang in view of Chen '444 does not teach or suggest the features of claim 27. Moreover, modifying this combination with the teachings of Kantrowitz does not cure this deficiency.

The Action relies on Kantrowitz for the teaching of "wherein the language system includes a character-based bigram language model and a word-based N-gram language model, where N>2". Assuming arguendo that Kantrowitz does teach that which they Action relies on Kantrowitz for, the cited portions of Kantrowitz, and Kantrowitz as a whole does not cure the already discussed deficiencies of Ouyang/Chen '444 with respect to claim 27. Kantrowitz merely teaches a system for identifying the language of individual words and is completely silent on the following features: "a resident language model residing on a mobile device to convert phonetic characters input into the mobile device into language characters using a first statistical language model", and "a nonresident language model residing on a server remote from the mobile device, the nonresident language model being configured to convert the phonetic characters into the language characters using a second statistical language model", as claim

27 requires. Thus, claim 28, which depends from claim 27, is not obvious over the cited combination of references.

Withdrawal of the 35 USC §103(a) rejection of claim 28 is respectfully requested.

Dependent claim 58 depends from claim 52 and is not obvious over the cited combination by virtue of this dependency. For the reasons already discussed, Ouyang in view of Chen '444 does not teach or suggest the features of claim 52. Moreover, modifying this combination with the teachings of Kantrowitz does not cure this deficiency.

The Action relies on Kantrowitz for the teaching of "wherein the language system includes a character-based bigram language model and a word-based N-gram language model, where N>2". Assuming arguendo that Kantrowitz does teach that which they Action relies on Kantrowitz for, the cited portions of Kantrowitz, and Kantrowitz as a whole does not cure the already discussed deficiencies of Ouyang/Chen '444 with respect to claim 52. Kantrowitz merely teaches a system for identifying the language of individual words and is completely silent on the following features: "a keypad of number keys, the number keys having associated letters of an alphabet", "a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters, and to generate likely language characters based on the input string", and "a display to present the likely language characters for user selection", as claim 52 requires. Thus, claim 58, which depends from claim 52, is not obvious over the cited combination of references.

Withdrawal of the 35 USC §103(a) rejection of claim 58 is respectfully requested.

Claims 11-13, 34, 35, 43, and 44 stand rejected under 35 USC §103(a) as being unpatentable over Ouyang in view of Chen '444 and further a view of US patent number 6,272,464 to Kiraz. This rejection is traversed.

Dependent claims 11-13 depend from claim 1 and are allowable over the cited combination at least for reasons based on these respective dependencies. For the reasons already presented, claim 1 is not obvious over the Ouyang/Chen '444 combination. Modifying this combination with the teachings of Kiraz does not cure this deficiency. Kiraz teaches a system to identify language origins of a proper name given training data for various languages and bigrams (Abstract, column 4, line 49 through column 5, line 15, column 6, line 61 through column 7, line 10). Combining these teachings, and the teachings of Kiraz as a whole, with Ouyang and Chen '444, still fails to teach or suggest the above recited features of claim 1, from which claims 11-13 depend.

Withdrawal of the 35 USC §103(a) rejection of claims 11-13 is respectfully requested.

Dependent claims 34 and 35 depend from claim 29 and are allowable over the cited combination at least for reasons based on these respective dependencies. For the reasons already presented, claim 29 is not obvious over the Ouyang/Chen '444 combination. Modifying this combination with the teachings of Kiraz does not cure this deficiency. Kiraz teaches a system to identify language origins of a proper name given training data for various languages and bigrams (Abstract, column 4, line 49 through column 5, line 15, column 6, line 61 through column 7,

line 10). Combining these teachings, and the teachings of Kiraz as a whole, with Ouyang and Chen '444, still fails to teach or suggest the above recited features of claim 29, from which claims 34 and 35 depend.

Withdrawal of the 35 USC §103(a) rejection of claims 34 and 35 is respectfully requested.

Dependent claims 43 and 44 depend from claim 37 and are allowable over the cited combination at least for reasons based on these respective dependencies. For the reasons already presented, claim 37 is not obvious over the Ouyang/Chen '444 combination. Modifying this combination with the teachings of Kiraz does not cure this deficiency. Kiraz teaches a system to identify language origins of a proper name given training data for various languages and bigrams (Abstract, column 4, line 49 through column 5, line 15, column 6, line 61 through column 7, line 10). Combining these teachings, and the teachings of Kiraz as a whole, with Ouyang and Chen '444, still fails to teach or suggest the above recited features of claim 37, from which claims 43 and 44 depend.

Withdrawal of the 35 USC §103(a) rejection of claims 43 and 44 is respectfully requested.

Claims 14 and 27 stand rejected under 35 USC §103(a) as being unpatentable over Ouyang in view of Chen '444 and further in view of US patent # 5,838,972 to Matsuzuka. These rejections are traversed.

Dependent claim 14 depends from claim 1 and is allowable over the cited combination at least for reasons based on this respective dependency. For the reasons already presented, claim 1 is not obvious over the Ouyang/Chen '444 combination. Modifying this combination with the teachings of Matsuzuka does

not cure this deficiency. Column 1, lines 25 through column 2, line 3, of Matsuzuka merely teaches that internationalized software programs may utilize separate remote servers to get inputs for complex languages such as Chinese because a large dictionary of words and a detailed knowledge of the languages is typically required to support text input mechanisms. Clearly, these teachings are completely silent with respect to any description of the above recited features of claim 1. Thus, combining Matsuzuka with Ouyang in view of Chen '444 does not teach or suggest the features of claim 1, upon which claim 14 depends.

For this reason alone, withdrawal of the 35 USC §103(a) rejection of claim 14 is requested.

Moreover, Matsuzuka's teaching of that a remote server can be used to facilitate text input mechanisms for complex languages clearly does not teach or suggest that the text input mechanism includes logic "to statistically derive the language characters using a second statistical language model", as claim 14 recites.

Accordingly, for each of the above reasons, withdrawal of the 35 USC §103(a) rejection of claim 14 is respectfully requested.

Independent claim 27 is allowable over the Ouyang/Chen '444 combination for the reasons already discussed above. Modifying this combination with the teachings of Matsuzuka does not cure this deficiency. Column 1, lines 25 through column 2, line 3, of Matsuzuka merely teaches that internationalized software programs may utilize separate remote servers to get inputs for complex languages such as Chinese because a large dictionary of words and a detailed knowledge of the languages is typically required to support text input mechanisms. Clearly, these teachings are completely silent with respect to any description of "a

nonresident language model residing on a server remote from the mobile device, the nonresident language model being configured to convert the phonetic characters into the language characters using a second statistical language model", as claim 27 requires. Nowhere does Matsuzuka teach that the remote server text input mechanism is configured to "convert the phonetic characters into the language characters using a second statistical language model". Thus, modifying Ouyang and Chen '444 with the teachings of Matsuzuka does not teach the features of claim 27.

Withdrawal of the 35 USC §103(a) rejection of claim 27 is respectfully requested.

Conclusion

Claims 1-60 are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of the subject application. If any issue remains unresolved that would prevent allowance of this case, the Examiner is requested to contact the undersigned attorney to resolve the issue.

Respectfully Submitted,

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